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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,095	12/21/2000	Benyahia Nasfi-Bakir	BAKIR 5121	6681

7590 01/15/2004
David J. Serbin
Unit 2, First Floor
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Alexandria, VA 22314

EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,095

Examiner

George R. Koch III

Applicant(s)

NASLI-BAKIR ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11804
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Williams (US Patent 4,806,183).

Williams discloses an apparatus for the controlled application of glue to elements to be assembled to a composite structure comprising element feeders (drive rollers 36a, 36b, and 36c), a glue applicator (item 42), and a control unit (items 30, 32 and 34), said control unit being programmable (see column 4, line 60), such that it adjusts the speed of drive rollers and the adhesive applicator rolls 38a, 38b, and 38c which inherently adjusts the amount of glue applied. In addition, the controller also controls the nip of the adhesive rollers, which also controls the amount of glue applied (see column 7, lines 46 to column 8, lines 44). The thin layers in Williams meet the definition of lamella (which is thin layers) and final product is a laminate product or beam or sheet. The program used to control the speed of the drive rollers element feeder (which also controls glue

application) and nip dimensions is consider capable of being optimized to apply a glue amount as a function of a lamella stacking time between glue application and pressing for a given element.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Detlefsen (US Patent 4,961,795).

Detlefsen discloses a method of manufacturing composite products, such as plywood, which are laminated beams formed from a plurality of lamella (see column 8, which talks about plys), wherein a plurality of lamellas are assembled by gluing them together under pressure, comprising the steps of:

- 1) providing a number of lamellas to be assembled (col. 10, line 13-21)
- 2) applying glue to at least one surface of each lamella (col. 10, 32-40)
- 3) assembling the lamellas to the desired structure (col. 10, line 41-42)
- 4) subjecting the assembled lamellas to pressure in a press (col. 10, line 43-45)
- 5) controlling the amount of at least one component of the glue applied at a

specific point of glue application on an element, to be an function of the waiting time it takes before the point of glue application is subjected to the pressure in the press (see especially column 10, lines 46 which disclose modifying the resin to reduce the cure time.) Furthermore, starting from the centermost to the outermost element, Detlefsen discloses adjusting the ratio of the components of glue. Since Detlefsen discloses that the amount of a glue component is a function of position and number of elements in the stack, and since the lamella stacking time (as defined by applicant) is a function of the waiting time which is a function of the position and number of elements in the stack,

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Detlefsen does disclose adjusting a component of the glue as a function of the lamella stacking time.

As to claim 2, Detlefsen discloses that the glue or binder is a multicomponent resin that uses an accelerator, i.e., hardener, to adjust the lamella stacking times (see especially column 10, lines 62-68).

As to claim 3, Detlefsen discloses that adding or increasing the ratio of accelerator to glue decreases the lamella stacking time.

4. Claims 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii (US Patent 5,665,197).

As to claim 17, Fujii discloses an apparatus for making veneer plies, i.e., laminated beams made of lamellas, comprising a lamella feeder (item 111), a glue applicator (item 112) and a control unit (item 125), and that the control unit controls the feed rate of the system (see column 11, lines 1-50), thus controlling the glue sequence and the glue amount. Fujii further discloses, in column 6, lines 41-46, that the glue application can be selected from a none to a target amount, the amount to be determined by considering at least the product to be made and the type of glue used. The program used to control the speed of the lamella feeder (which also controls glue application) and the selectability of the predetermined glue amounts provides the capability of being optimized to apply a glue amount as a function of the lamella stacking time which is a function of a waiting time between glue application and pressing for a given element.

As to claim 14, Fujii also discloses a lamella stacking unit (item 118) and presses (item 197).

As to claims 15 (if taken to be dependent on claim 14) and 16, Fujii controls the rate of glue application by controlling the speed of the lamella through the overall system, including the feeder.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii (US Patent 5,665,197) in view of Steinberg (US Patent 3,582,428).

As to claim 17, Fujii discloses an apparatus for making veneer plies, i.e., laminated beams made of lamellas, comprising a lamella feeder (item 111), a glue

applicator (item 112) and a control unit (item 125), and that the control unit controls the feed rate of the system (see column 11, lines 1-50), thus controlling the glue sequence and the glue amount. Fujii further discloses, in column 6, lines 41-46, that the glue application can be selected from a none to a target amount, the amount be determined by considering at least the product to be made and the type of glue used. The program used to control the speed of the lamella feeder (which also controls glue application) and the selectability of the predetermined glue amounts provides the capability of being optimized to apply a glue amount as a function of the lamella stacking time which is a function of a waiting time between glue application and pressing for a given element. However, Fujii does not explicitly disclose controlling the glue applicator and lamella feeder to provide an optimal amount of applied glue as a function of the lamella stacking time.

However, Steinberg recognizes controlling the glue applicator and lamella feeder to provide an optimal amount of applied glue as a function of the lamella stacking time (column 3). Steinberg discloses doing so would produce an optimum bond in each of the component bonds (see column 4, line 17-22), rather than the average best bond of the prior art (column 1, lines 46-50). Therefore, it would have been to use a control unit that provides for controlling the glue applicator and lamella feeder to provide an optimal amount of applied glue as a function of the lamella stacking time in order to ensure optimal bonds in each component bond.

As to claim 14, Fujii also discloses a lamella stacking unit (item 118) and presses (item 197).

As to claims 15 (if taken to be dependent on claim 14) and 16, Fujii controls the rate of glue application by controlling the speed of the lamella through the overall system, including the feeder.

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detlefsen (US Patent 4,961,795) as applied above, and further in view of Steinberg (US Patent 3,582,428).

Detlefsen discloses a method of manufacturing composite products, such as plywood, which are laminated beams formed from a plurality of lamella (see column 8, which talks about plies), wherein a plurality of lamellas are assembled by gluing them together under pressure, comprising the steps of:

- 1) providing a number of lamellas to be assembled (col. 10, line 13-21)
- 2) applying glue to at least one surface of each lamella (col. 10, 32-40)
- 3) assembling the lamellas to the desired structure (col. 10, line 41-42)
- 4) subjecting the assembled lamellas to pressure in a press (col. 10, line 43-45)
- 5) controlling the amount of at least one component of the glue applied at a specific point of glue application on an element, to be an function of the waiting time it takes before the point of glue application is subjected to the pressure in the press (see especially column 10, lines 46 which disclose modifying the resin to reduce the cure time.) Furthermore, starting from the centermost to the outermost element, Detlefsen discloses adjusting the ratio of the components of glue. Since Detlefsen discloses that the amount of a glue component is a function of position and number of elements in the

stack, and since the lamella stacking time (as defined by applicant) is a function of the waiting time which is a function of the position and number of elements in the stack, Detlefsen does disclose adjusting a component of the glue as a function of the lamella stacking time. In any event, Steinberg also discloses adjusting the component of glue, (the total amount) as a function of the stacking time (see column 3). Steinberg discloses that such progressive alterations of amounts allow for improved bonding (column 4, lines 17-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have adjusted a component of the glue as a function of the lamella stacking time in order to achieve optimal bonding in all lamellas.

As to claim 2, Detlefsen discloses that the glue or binder is a multicomponent resin that uses an accelerator, i.e., hardener, to adjust the lamella stacking times (see especially column 10, lines 62-68).

As to claim 3, Detlefsen discloses that adding or increasing the ratio of accelerator to glue decreases the lamella stacking time.

9. Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cone et al (US Patent 3,895,984), Gibson et al (US Patent 5,948,188) and Detlefsen et al (4,961,795).

Cone discloses an apparatus for the manufacture of composite products such as laminated beams made of lamellas, comprising an element feeder (item 120, 122, 124) which can feed lamellas, glue applicator (item 70) and a press (item 144). Cone also discloses a control unit for controlling the dispensing of adhesive. The control unit is

capable of being adjusted, i.e., programmed, to provide an optimal applied glue amount by adjusting the air injected into the glue. The program used to control the optical applied glue provides the capability of being optimized to apply a glue amount as a function of the lamella stacking time which is a function of a waiting time between glue application and pressing for a given lamella. Cone discloses that the lamellas are stacked between the glue applicator and the press, but does not disclose the details of the stacking unit.

Gibson discloses a stacking unit that receives previously glued elements, i.e. lamellas, stacks them, and transfers the stacked elements or lamellas into a press (Figures 1 and 2). Gibson discloses that such a stacking unit improves the alignment of the elements (see column 2, lines 29-34). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have incorporated the stacking substructure of Gibson in the overall apparatus of Cone order to ensure proper alignment and increased production efficiency.

As to claim 16, Cone is capable of adjusting the glue amount by adjusting the air quantity injected into the glue, which adjusts the rate of glue application to the elements.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cone and Gibson as applied to claim 14 above, and further in view of Williams (US Patent 4,806,183).

Cone and Gibson as applied to claim 14 do not disclose that the control sequence control the speed of the movement of the feeder and thus the elements or lamellas through the glue applicator.

Williams discloses a control unit (items 30, 32 and 34), said control unit being programmable (see column 4, line 60), such that it adjusts the speed of drive rollers and the adhesive applicator rolls 38a, 38b, and 38c which inherently adjusts the amount of glue applied. Such a system is capable of utilizing either discrete or continuous elements. One in the art would appreciate that utilizing a speed control system allows for quicker and finer adjustment of the glue application process by avoiding the need for minute changes in the glue dispensing system which are vulnerable to irregularities due to clogging and setting of the glue. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a speed control system as in Williams for adjusting the glue application in the overall apparatus of Cone and Gibson in order to ensure efficient and error free glue quantity application.

11. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detlefsen as applied to claims 1-3 above, or Detlefsen and Steinberg as applied to claims 1 and 3 above, and further in view of the admitted prior art.

Detlefsen in claims 1-3 disclose that it is known to adjust the waiting time the glue from lamella to lamella such that the innermost, or last lamella, has a shorter waiting time. Detlefsen does not disclose that the glue is a two-component glue.

The admitted prior art discloses that it is known that the waiting time of glue can be adjusted by changing the glue quantity (see specification, page 1, lines 15-17, which state that the waiting time is dependent on glue quantity) for either one or two component glues. One in the art would appreciate that utilizing modified quantities of glue with different waiting times as suggested by the admitted prior art with the suggestion of Detlefsen to used different waiting times from lamella to lamella would allow for all the elements to be bonded at the same time and under the same pressure and temperature.

Similarly, as to claims 5 and 6, Detlefsen and/or Detlefsen with Steinberg discloses that it is known to adjust the quantity from lamella to lamella, and using the concept of changing glue quantity to change the waiting time as suggested in the admitted prior art, this would lead to constant glue on an element, but differences from lamella to lamella such that the first lamella, receives the a smaller amount of glue.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Detlefsen and the admitted prior art, or Detlefsen, Steinberg, and the admitted prior art as applied to claims 4 above, and further in view of any of Payzant (US 2,205,600), Dike (US 2,178,566), Dike (US 2,282,177) and Warren (US 3,362,120).

Detlefsen and the admitted prior art do not disclose applying the glue in a varied manner.

Applying the glue in a varied manner is well known and conventional, especially when the lamellas are later subjected to a pressing operation which can spread the glue

out under pressure before full setting occurs, as shown by any of Figure 1 of Dike '177, Figure 1 of Dike '566, Figure 7 of Payzant, and Figure 3 of Warren. The motivation for doing such is that it is known that subsequent pressing operations would spread the glue (for example, see the distributed glue layer in Figure 3 of Dike '566 which is subsequent to a pressing operation). One in the art would appreciate that using a varied manner of applying the glue would result in less overall glue being used, and would reduce the cost of production. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a varied manner of applying glue in order to reduce the production cost of producing the laminated final product.

13. Claims 8-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Detlefsen and the admitted prior art, or Detlefsen, Steinberg and the admitted prior art as applied to claims 4-6 above, and further in view of Fujii (US Patent 5,665,197).

As to claims 8-9, Detlefsen does not disclose controlling the amount of glue by controlling the speed of movement of the lamellas.

Fujii discloses that the control unit controls the feed rate of the system (see column 11, lines 1-50), thus controlling the glue sequence and the glue amount. Thus, the amount of glue applied is controlled by controlling the rate of application of glue onto the surface of the lamellas by controlling the speed of movement of the lamellas. One in the art would appreciate that utilizing a speed control system allows for quicker and

finer adjustment of the glue application process by avoiding the need for minute changes in the glue dispensing system which are vulnerable to irregularities due to clogging and setting of the glue. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a speed control system as in Fujii for adjusting the glue application in the overall of Detlefsen and the admitted prior art in order to ensure efficient and error free glue quantity application.

As to claim 10, Fujii discloses that the apparatus is capable of varying the speed of movement from one lamella to another. Detlefsen and the admitted prior art combine make obvious that adjusting the glue from lamella to lamella would reduce waiting times and glue overuse. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have varied the speed of movement from lamella to lamella in order to adjust the waiting times and improve production efficiency.

As to claims 12 and 13, Fujii moves continuously, and is capable of moving stepwise.

14. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Detlefsen, the admitted prior art and Fujii, or Detlefsen, Steinberg, the admitted prior art, and Fujii as applied to claims 8 above, and further in view of any of Payzant (US 2,205,600), Dike (US 2,178,566), Dike (US 2,282,177) and Warren (US 3,362,120).

Detlefsen, the admitted prior art and Fujii do not disclose applying the glue in a varied manner.

Applying the glue in a varied manner is well known and conventional, especially when the elements are later subjected to a pressing operation which can spread the glue out under pressure before full setting occurs, as shown by any of Figure 1 of Dike '177, Figure 1 of Dike '566, Figure 7 of Payzant, and Figure 3 of Warren. The motivation for doing such is that it is known that subsequent pressing operations would spread the glue (for example, see the distributed glue layer in Figure 3 of Dike '566 which is subsequent to a pressing operation). One in the art would appreciate that using a varied manner of applying the glue would result in less overall glue being used, and would reduce the cost of production. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a varied manner of applying glue in order to reduce the production cost of producing the laminated final product.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-800-877-8339 and giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

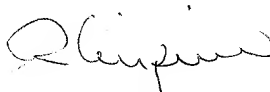
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.



George R. Koch III
January 9, 2004



RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700